UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF COMMERCIAL FISHERIES

CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY

DECEMBER 1965

PART II–Fishing Information*

Sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists

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SEA SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN
DECEMBER 1965

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U.S. Naval Communication Station Balboa, Fort Amador, Canal Zone

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Hopkins Marine Station, Pacific Grove, California by J. P. Balesteri

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Scripps Institution of Oceanography, La Jolla, California by Margaret Robinson and Hans Klein

Ships Bali, Californian and Royal Pacific

Charts

Figure 1.--Mean sea surface temperatures (°F) derived from approximately 8000 observations. Squares show temperatures at weather-ship stations. Numerals on shore are temperatures at coastal and light-ship stations.

Figure 2.--Deviation of sea surface temperatures (°F) from long term charts of H.O. 225. Hatched areas are colder than mean.

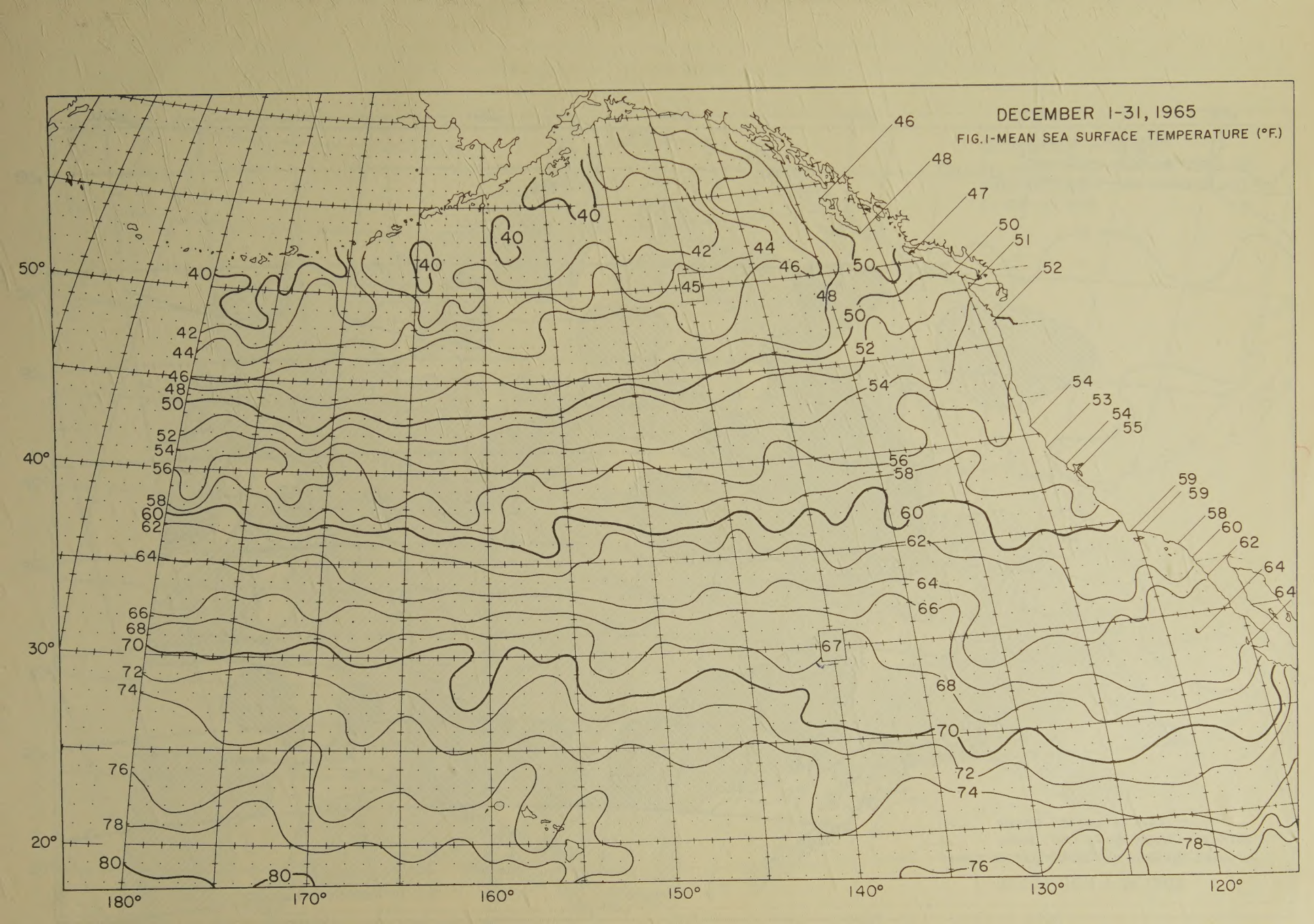
Figure 3.--Deviation of sea surface temperatures (°F) from those of December 1964. Hatched areas are colder than 1964.

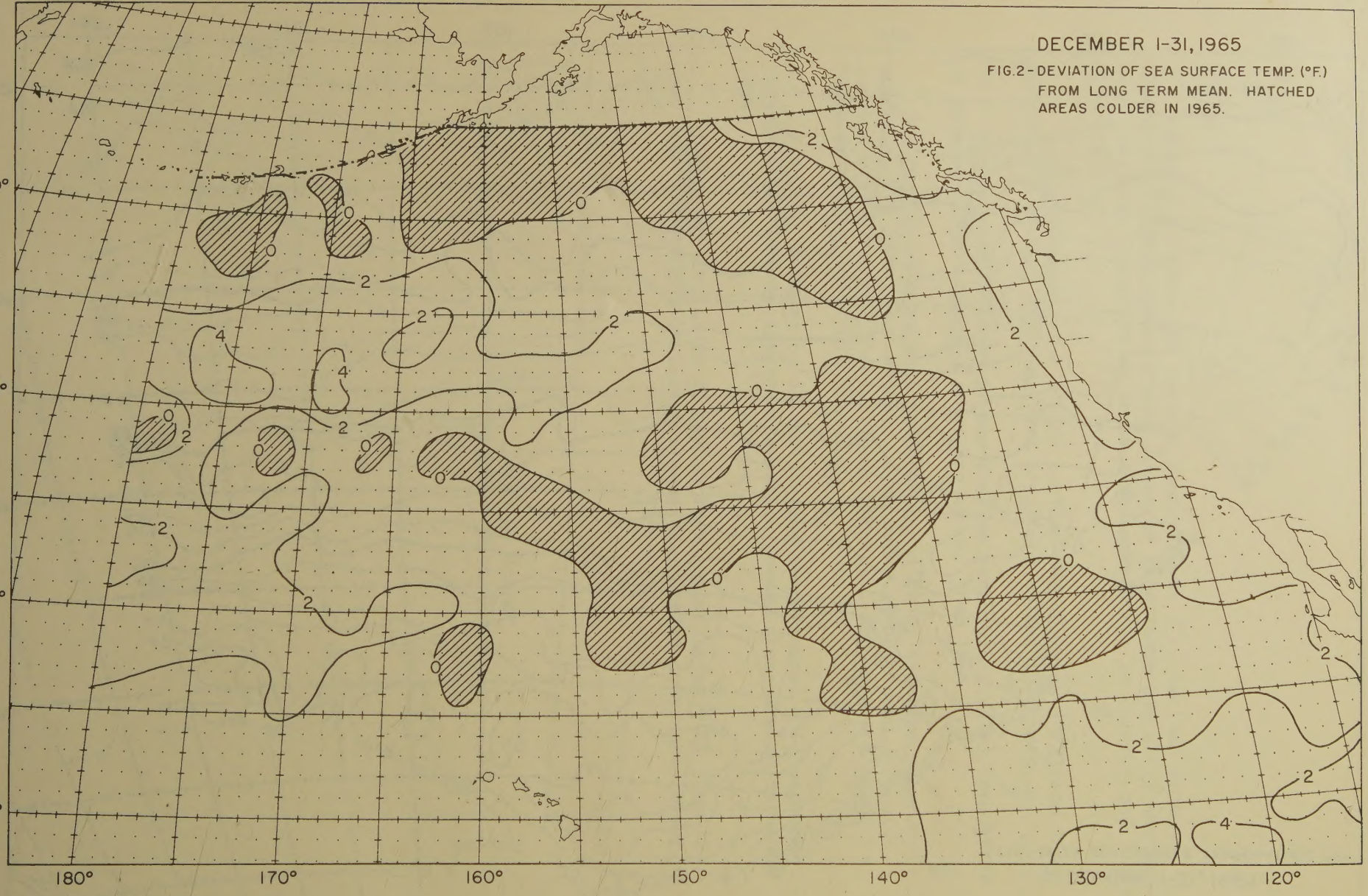
Figure 4.--Sea surface temperatures (°F) by 1-degree squares, approximately 2000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal stations.

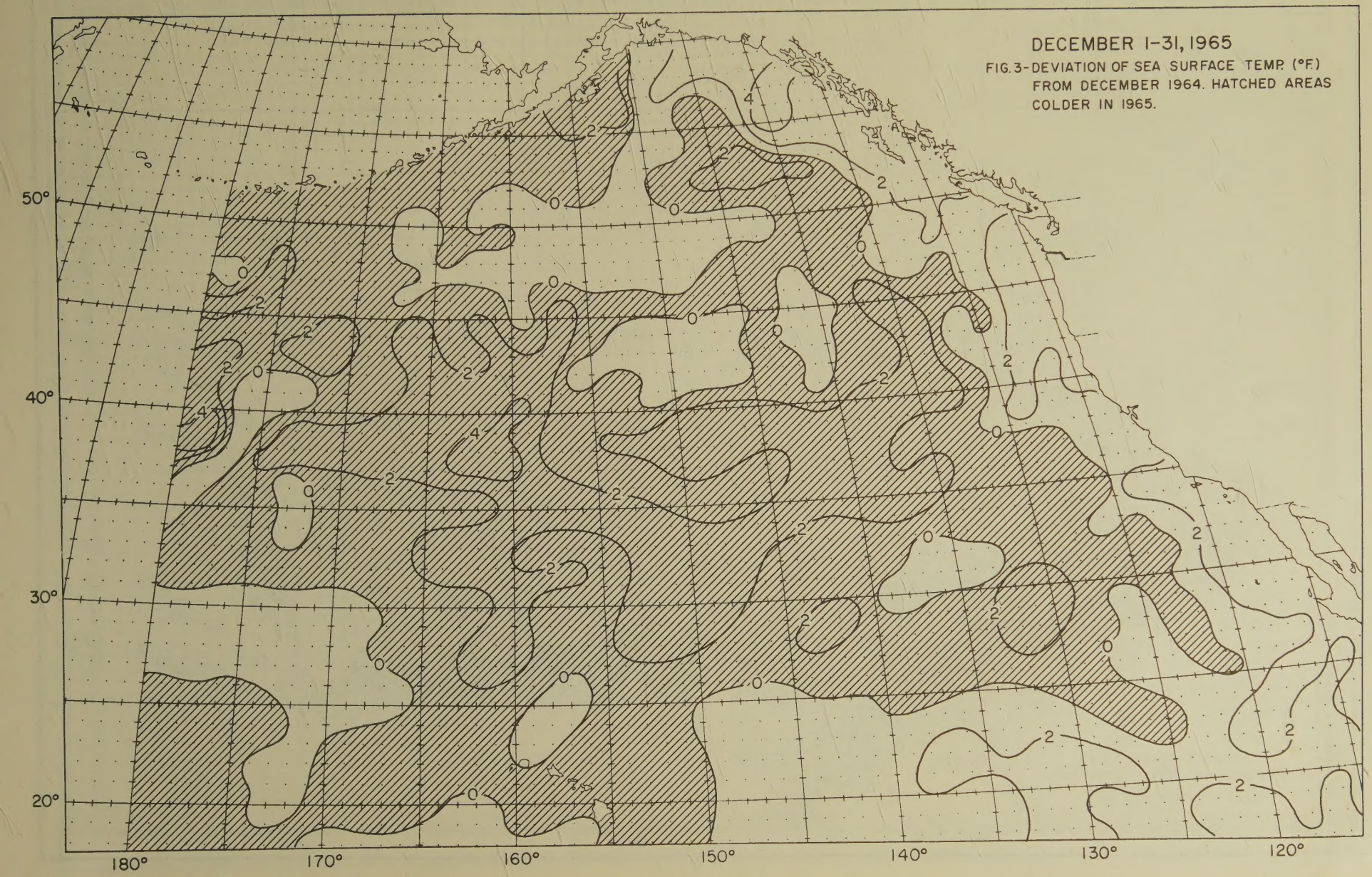
Figure 5.--Deviation of sea surface temperatures (°F) December 1965-December 1964 by 1-degree squares. Shaded areas are colder than 1964.

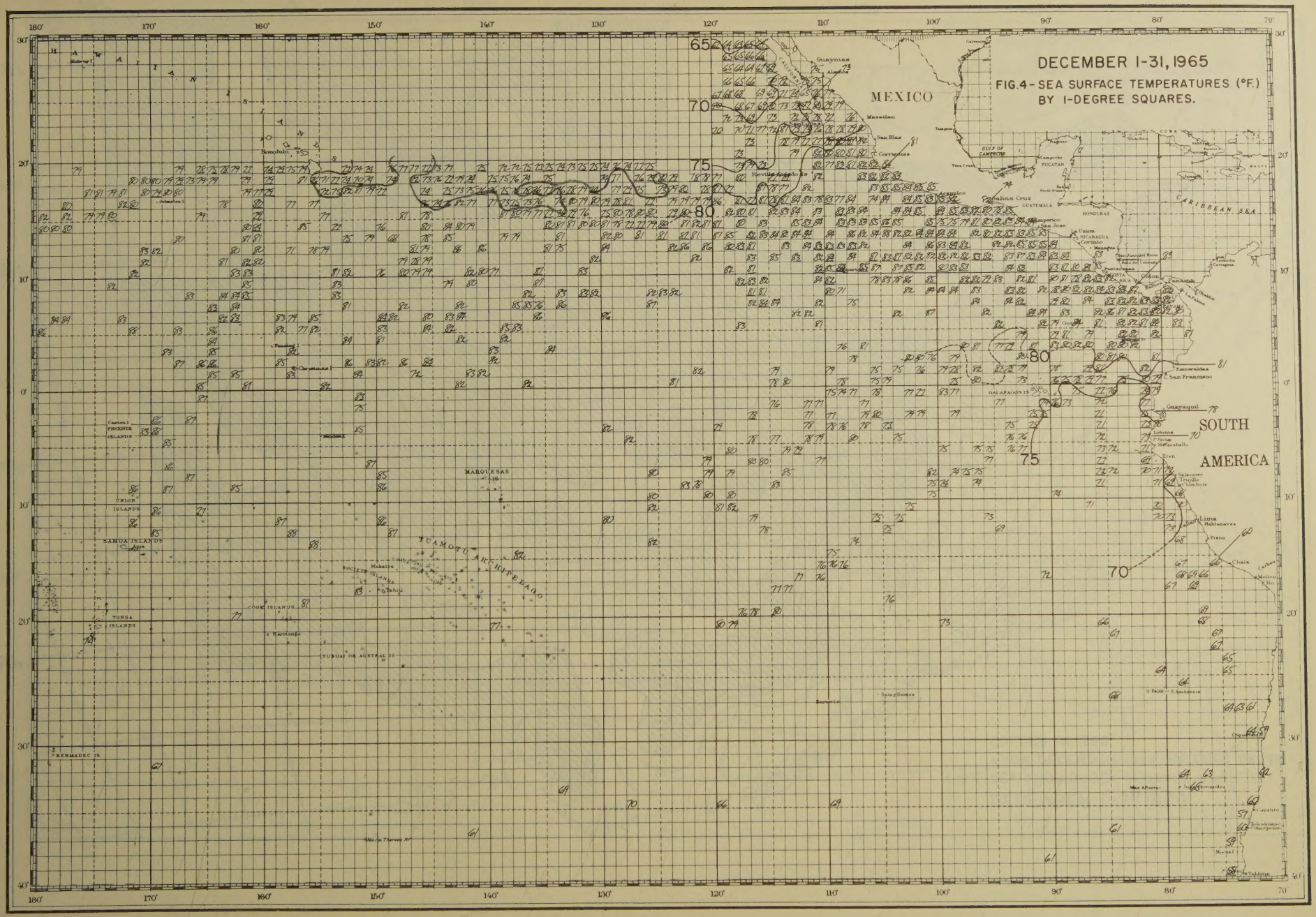
Figure 6.--Deviation of sea surface temperatures (°F) from 12-year mean (1947-1958) by 2-degree squares. Shaded areas are colder in 1965.

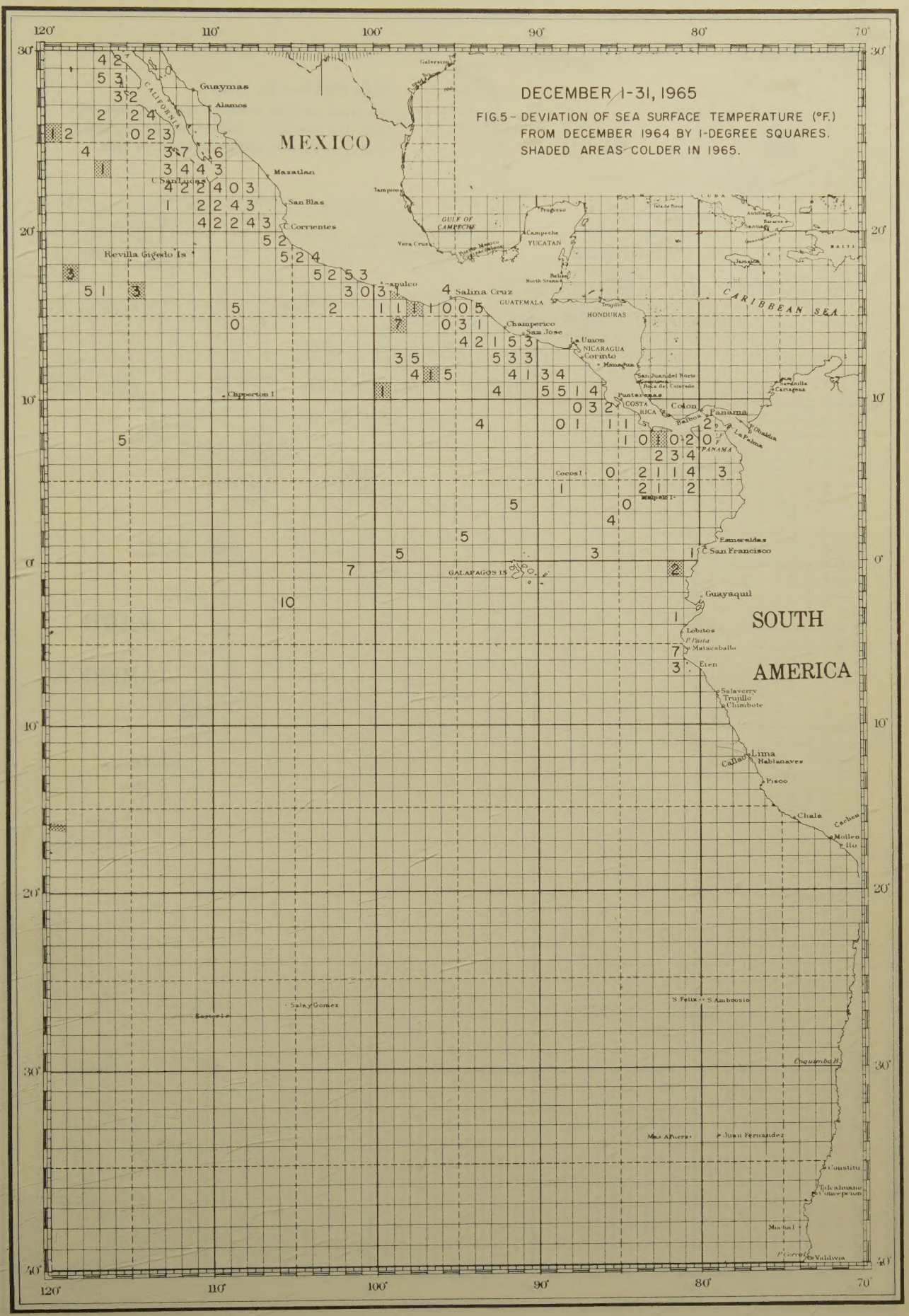
James A. Renner
Fishery Biologist (General)

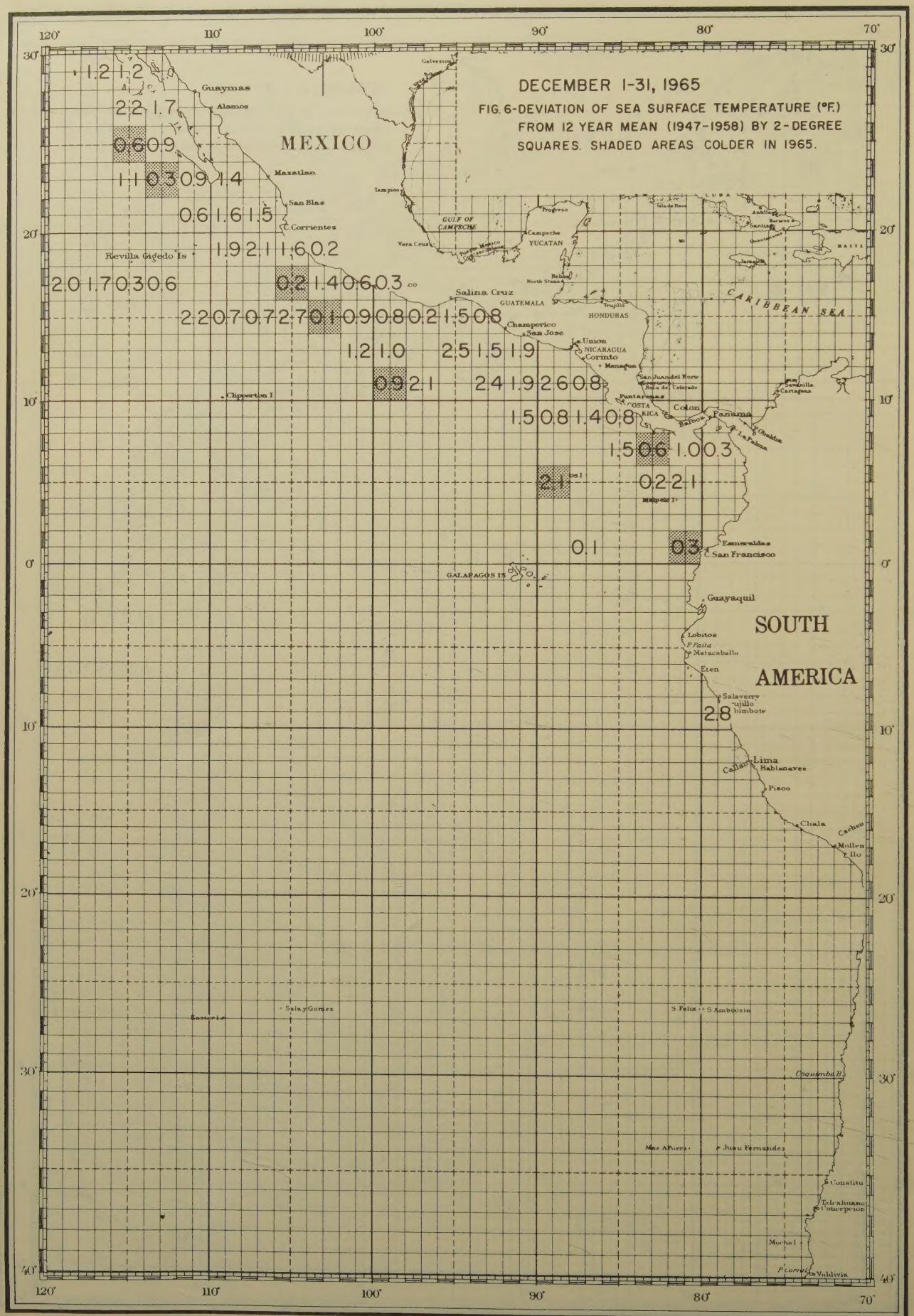

DECEMBER 1-31, 1965
FIG.1-MEAN SEA SURFACE TEMPERATURE (°F.)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
45
67


DECEMBER 1-31, 1965
FIG.2-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM LONG TERM MEAN. HATCHED AREAS COLDER IN 1965.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


DECEMBER 1-31, 1965
FIG. 3-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM DECEMBER 1964. HATCHED AREAS COLDER IN 1965.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


DECEMBER 1-31, 1965
FIG.4 - SEA SURFACE TEMPERATURES (°F.) BY 1-DEGREE SQUARES.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
HONDURAS
NICARAGUA
GUATEMALA
COSTA RICA
PANAMA
CUBA
GALAPAGOS IS.
MARQUESAS
TUAMOTU ARCHIPELAGO
SOCIETY ISLANDS
SAMOA ISLANDS
TONGA ISLANDS
COOK ISLANDS
UNION ISLANDS
PHOENIX ISLANDS
KERMADEC IS
TUBUAI OR AUSTRAL IS
Honolulu
Guaymas
Mazatlan
San Blas
Manzanillo
Salina Cruz
Guayaquil
Lima
Callao
Chala
Tahiti
Rarotonga
Pisco
Valparaiso
Talcahuano
Valdivia
Juan Fernandez
Easter I
Pitcairn I
Henderson I
Ducie I
Oeno I
Malden I
Caroline I
Flint I
Vostok I
Starbuck I
Jarvis I
Fanning I
Christmas I
Palmyra I
Johnston I
Wake I
Midway Is
Kure I
Necker I
Nihoa I
Gardner Pinnacles
Maro Reef
Laysan I
Lisianski I
Pearl and Hermes Reef
Gardner I
Kauai
Oahu
Maui
Hawaii
Nevill Island
Socorro I
Clarion I
Roca Partida
Isla Guadalupe
Isla Cedros
Isla Natividad
Isla Asuncion
Isla Cerros
Isla Margarita
Isla Coiba
Isla Malpelo
Isla Gorgona
Isla Gallo
Isla Plata
Isla Puna
Isla Lobitos
Isla Foca
Isla Lobos de Afuera
Isla Lobos de Tierra
Isla Macabi
Isla Chiloe
Isla Mocha
Isla Santa Maria
Isla Mas Afuera
Isla Mas a Tierra
Isla Robinson Crusoe
Isla Alejandro Selkirk
Isla Santa Clara
Isla Juan Fernandez
Isla Diego Ramirez
Isla Wellington
Isla Madre de Dios
Isla Navarino
Isla Hoste
Isla Nueva
Isla Picton
Isla Lennox
Isla Gable
Isla Barnevelt
Isla Evout
Isla Deceit
Isla Tres Montes
Isla Guafo
Isla Mocha
Isla Santa Maria
Isla Mas Afuera
Isla Mas a Tierra
Isla Robinson Crusoe
Isla Alejandro Selkirk
Isla Santa Clara
Isla Juan Fernandez
Isla Diego Ramirez
Isla Wellington
Isla Madre de Dios
Isla Navarino
Isla Hoste
Isla Nueva
Isla Picton
Isla Lennox
Isla Gable
Isla Barnevelt
Isla Evout
Isla Deceit
Isla Tres Montes
Isla Guafo


DECEMBER 1-31, 1965
FIG.5 - DEVIATION OF SEA SURFACE TEMPERATURE (°F.) FROM DECEMBER 1964 BY 1-DEGREE SQUARES. SHADED AREAS COLDER IN 1965.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CAMPECHE
GALAPAGOS IS
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Revilla Gigedo Is
Acapulco
Salina Cruz
Champerico
San Jose
La Union
Corinto
Managua
Chippertons I
Cocos I
Malpelo I
Esmeraldas
San Francisco
Guayaquil
Lobitos
Talara
Matacaballo
Salaverry
Trujillo
Chimbote
Lima
Callao
Pisco
Chala
Salas y Gomez
S. Felix
S. Ambrosio
Juan Fernandez
Valdivia
Corral
Mocha I
Concepcion
Talcahuano
Constitu
Coquimbo
Arica
Iquique
Antofagasta
Caldera
Coquimbo B.
Panama
Colon
Puntarenas
Progreso
Campeche
Tampico
Veracruz
Galveston
Belize
Trujillo
Cuba
Haiti
Jamaica
Curacao
Aruba
Barbados
Santa Marta
Cartagena
Maracaibo
Tela de Pinos
Bocas del Toro
Balboa
Chiriqui
Obaldia
La Palma
Bahia
Cachoeira
Mollendo
Ilo
Pisco
Chala
Lobitos
Talara
Matacaballo
Salaverry
Trujillo
Chimbote
Callao
Lima
Hablanaves
Esmeraldas
San Francisco
Guayaquil
Cocos I
Malpelo I
Galapagos Is
Puntarenas
Colon
Panama
Balboa
Bocas del Toro


DECEMBER 1-31, 1965
FIG. 6-DEVIATION OF SEA SURFACE TEMPERATURE (°F.) FROM 12 YEAR MEAN (1947-1958) BY 2-DEGREE SQUARES. SHADED AREAS COLDER IN 1965.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CAMPECHE
GALAPAGOS IS
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Revilla Gigedo Is
Salina Cruz
GUATEMALA
HONDURAS
Champerico
San Jose
NICARAGUA
Corinto
Managua
Clipperton I
COSTA RICA
Colon
Panama
Esmeraldas
San Francisco
Guayaquil
Lobitos
Talara
Eten
Salaverry
Trujillo
Chimbote
Lima
Callao
Hablanaves
Pisco
Chala
Cachero
Mollendo
Ilo
Sala y Gomez
S. Felix
S. Ambrosio
Juan Fernandez
Constitucion
Talcahuano
Concepcion
Valdivia
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
40°